

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1           Claim 1 (currently amended): An image processing method for performing half tone  
2 processing on input images using an error diffusion method, comprising the steps of:  
3       generating a sine wave in which the amplitude and the frequency are modulated according to the  
4       average value of a target pixel value and the peripheral pixel values;  
5       adding quantization errors, said target pixel value and said sine wave;  
6       quantizing said addition result by a predetermined number of grayscale levels; and  
7       calculating the quantization errors of said peripheral pixels from errors by said quantization.

1           Claim 2 (currently amended): The image processing method according to Claim 1, wherein  
2       said step of generating a sine wave further comprises the steps of:  
3           calculating the average value of said target pixel value and said peripheral pixel values;  
4           calculating the difference between said target pixel value and said average value[[,]] ; and  
5           modulating the amplitude of said sine wave using said average value and said difference.

1           Claim 3 (original): The image processing method according to Claim 1, wherein said step  
2           of generating a sine wave further comprises a step of independently controlling the cycle in the  
3           horizontal direction and the cycle in the vertical direction of said sine wave.

1           Claim 4 (original): The image processing method according to Claim 1, wherein said step  
2           of generating a sine wave further comprises a step of setting different initial phases of said sine wave  
3           for the input image of each color.

1           Claim 5 (original): The image processing method according to Claim 1, further comprising  
2           a step of scanning said input image in two directions and reading said target pixel value and said  
3           peripheral pixel values,

4           wherein said step of calculating the quantization errors of the peripheral pixels further  
5           comprises a step of calculating said quantization errors using an error filter which is selected from  
6           a plurality of error filters according to said target image value.

1           Claim 6 (currently amended): An image processor which performs half tone processing on  
2           an input image using an error diffusion method, said image processor comprising:

3           a memory for storing said input image; and  
4           a processing part for performing said half tone processing on said input image,  
5           wherein said processing part adds a sine wave in which the amplitude and the frequency are

6 modulated according to the average value of the target pixel value and the peripheral pixel values,  
7 ~~said~~ diffused quantization errors, and said target pixel value, then quantizes the addition result by  
8 a predetermined number of grayscale levels, and calculates the quantization errors of said peripheral  
9 pixels from errors by said quantization.

1 Claim 7 (original): The image processor according to Claim 6, wherein said processing part  
2 calculates the average value of said target pixel value and said peripheral pixel values, calculates the  
3 difference between said target pixel value and said average value, and  
4 modulates the amplitude of said sine wave using said average value and said difference.

1 Claim 8 (currently amended): The image processor according to Claim 6, wherein said  
2 processing part independently ~~controls~~ controls the cycle in the horizontal direction and the cycle  
3 in the vertical direction of said sine wave.

1 Claim 9 (original): The image processor according to Claim 6, wherein said processing  
2 part sets different initial phases of said sine wave for the input image of each color.

1 Claim 10 (original): The image processor according to Claim 6, said processing part scans  
2 said input image in two directions and reads said target pixel value and said peripheral pixel values,  
3 and calculates said quantization errors using an error filter which is selected from a plurality of error

4 filters according to said target image value.

1 Claim 11 (currently amended): A storage medium for storing a program to perform half tone  
2 processing on an input image using an error diffusion method, wherein said program comprises:  
3 a program for generating a sine wave in which the amplitude and the frequency are  
4 modulated according to the average value of the target pixel value and the peripheral pixel values;  
5 a program for adding said diffused quantization errors, said target pixel value and said sine wave;  
6 a program for quantizing said addition result by a predetermined number of grayscale levels; and  
7 a program for calculating the quantization errors of said peripheral pixels from errors by said  
8 quantization.

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